DRAFT
COMMENTS
AND RESPONSES
02/11/22

SURFACE WATER EC AND SAR STANDARDS

1. The Board has received several comments that recommend retaining the existing narrative water quality standards that govern Electrical Conductivity (EC) and Sodium Adsorption Ratio (SAR) and not adopt any one of the three proposed numeric EC and SAR standards that have been noticed. The Board has considered those comments and concludes that numeric water quality standards for EC and SAR are necessary to protect the agricultural uses of waters in the Powder River Basin. The comments and responses that support that decision follow:

Comment A: The proposed rules are not consistent with scientific information regarding irrigation water quality and potential effects on Montana soils and crops. This is illustrated by the inability of MDEQ and others to develop clear, concise and consistent standards as demonstrated by the numerous changes that have been made during the development of the proposed standards.

Response:
The process of developing water quality standards for EC and SAR in the Powder River Basin has been underway for more than two years. The Department has been reviewing previously existing water quality data, collecting additional data and reviewing available information about crops and irrigation practices in the Basin. Initially, draft standards were prepared and distributed for comment by the agricultural community, environmental representatives and the coal bed methane industry. Based on the comments received and new data and information received the initial draft standards have gone through several revisions. The number of revisions of the draft standards do not suggest that the department is not able to develop the necessary standards rather it shows that the Department was engaged in an open and responsive process.

The board believes that there is sufficient information about the affect of irrigation water salinity and SAR to establish water quality standards that are protective of existing and future beneficial uses. The board agrees with the comment of EPA, which stated: "Although the issues are complex, the science for some key factors imperfect, and the data on existing conditions incomplete, we believe the existing information is sufficient to support adoption of appropriate and protective standards now . . .". Despite the various changes to the rules that are being made in response to comments, the board believes that there is sufficient information to adopt numeric standards that are protective of designated uses. Given that numeric standards are necessary to clearly delineate an enforceable benchmark that protects designated uses, the board is adopting the rules as modified by its response to comments.

The Board has considered the public comments on the draft water quality standard rules and is modifying the rules as follows:

a. The water quality standards for EC and SAR that apply during the irrigation season will be include the month of March, because irrigation has and will continue to occur during March when conditions are favorable, especially on the tributaries

b. The EC standard for the Powder River during the irrigation season has been raised from 1900 to 2000 μS/cm and for the non-irrigation season the EC standard has been raised from 2000 to 2500 μS/cm and the SAR standard has been raised from 5 to 7.5. These increases more nearly reflect natural conditions and do not increase the impacts to irrigated agriculture.

c. The SAR standard for the Tongue River and Rosebud Creek during the irrigation season is no longer linked to EC by a formula. This change is the result of a review of the "Hanson" diagram. This diagram is the basis for the formula in the draft DES rules (SAR =(EC X 0.0071) – 2.475) that relates "permissible" SAR to EC. The review of comments revealed that the diagram was incorrectly copied from the original scientific papers. Using the original papers the correct formula is SAR= (EC X 0.0067)-3.345.

d. The use of the formula has been deleted for the following reasons. For the Tongue River and Rosebud Creek the minimum EC at which the formula was applied in the draft DEQ rules was 350 μS/cm which resulted in a water quality standard for SAR of 0.5. However, long-term irrigation of comparable soils in the Yellowstone Valley using water with an EC less than 500 μS/cm and a SAR up to 2 has not caused noticeable damage to soils. If the correct formula is used a SAR of 2 corresponds to an EC of about 800 μS/cm. Thus, the formula could only be used for EC's between 800 and 1000 μS/cm (the EC standard). Because of the small range of potential applicability for these streams, the uncertainty of the formula values and because dropping the formula greatly simplifies the rules the formula should not be used for the Tongue River and Rosebud Creek.

   In the Powder and Little Powder Rivers the EC is essentially always above 1240 μS/cm. At EC values greater that 1240 μS/cm the formula gives SAR values greater that 5. Because the maximum SAR irrigation season limit for these rivers is set at 5 the formula should not be used for these streams.

   For the tributaries the EC standard of 500 μS/cm and use of the formula would result in a SAR limit of 0.005 which is well below the SAR of 2 which is not harmful in the Yellowstone Valley. Thus the formula should not be used.

Comment B: A water quality standard that is adopted to protect a particular beneficial use, such as agriculture, should be the same regardless of the specific reach of the river. Two of the rule proposals, however, would establish reach-specific standards that are, in fact, an approximation of existing quality. As a result, the reach-specific standards proposed by DEQ and the irrigators are contrary to the concept that a standard should be set to protect designated uses, not to allocate

the "assimilative capacity" of the stream. Therefore, the reach-specific standards should not be adopted.

Response: The board agrees. The board does not believe that water quality standards should be developed in a manner that duplicates or conflicts with other water quality programs. The function of protecting or allocating the existing assimilative capacity is a function of the nondegradation policy and, in some instances, the TMDL process. Since these programs adequately protect or allocate assimilative capacity, the board does not believe that the water quality standards are necessary, or, for that matter, appropriate to accomplish the same result. For this reason, the board agrees with EPA, which stated that establishing water quality criteria to allocate or protect assimilative capacity would set a poor precedent.

Comment C: The set of rules proposed by the irrigators also defines EC and SAR as harmful parameters for the purposes of nondegradation significance thresholds. This threshold is 50 percent of the standard. This set of rules also sets the standards at or near ambient levels. As a result essentially all new discharges would be significant and would require an authorization to degrade. It can be argued that the effective result would be to prohibit new discharges even though some discharges could occur without impacting current water users. Thus this set of rules and especially the designation of EC and SAR as harmful parameters should not be adopted.

Response: As noted in the comment, defining EC and SAR as "harmful" when the standards are set at existing water quality would require most new dischargers to request an authorization to degrade. Accordingly, new dischargers would be required to demonstrate that any change in water quality, no matter how small the effect, is justified based upon important social and economic reasons, and demonstrate that there are no feasible alternatives as well. *See* § 75-5-303, MCA. The board does not believe that setting nonsignificant thresholds at a point that requires virtually all new dischargers to make the demonstration required under § 75-5-303, MCA, is warranted for two reasons. First, since the reach-specific standards are set at existing quality, there is virtually no "high quality" water (i.e., water quality better than the standards) that would require an authorization to degrade under the irrigator's proposal. Second, requiring all new discharges, including those that cause de minimis changes in water quality, to demonstrate that the discharge is justified under § 75-5-303, MCA, ignores the legislative intent that truly nonsignificant changes are exempt from § 75-5-303, MCA.

Comment D: Although the department concedes that SAR and EC are "harmful" parameters, the department's proposal treats these parameters differently from all other harmful parameters by exempting them from the nondegradation policy. The department's proposal exempts SAR and EC by providing a nonsignificance threshold that is the same as the department's proposed numeric water quality standards for SAR and EC. The board should reject this proposal because it will not pass strict scrutiny by the courts and is therefore unconstitutional. Instead, the board should adopt the irrigator's proposal that would set the nonsignificance threshold at 50% of the applicable standard, which is the threshold for all other harmful parameters.

Another commentor argued that SAR and EC should be designated as "toxic" for purposes of establishing a 15% nonsignificance threshold for nondegradation review.

Response: The department has not conceded that SAR and EC should be classified as "harmful." Moreover, the board does not agree that the rule should be changed to define SAR and EC as either "harmful" or "toxic." Although the board is adopting numeric standards that provide for some assimilative capacity (i.e., some "high quality" water), the basic flaw in defining these parameters remains the same as discussed in response to Comment C. Establishing nonsignificance thresholds at 50% or 15% of the numeric standards being adopted by the board would require virtually every new discharger to request an authorization to degrade. As stated above, requiring all new discharges, including those that cause de minimis changes in water quality, to demonstrate that the discharge is justified under § 75-5-303, MCA, ignores the legislative intent that truly nonsignificant changes are exempt from § 75-5-303, MCA.

Comment E: Adoption of any numerical standards for EC and SAR would create numerous unintended consequences including:

a. Eliminating the potential for discharge of CBM water,
b. Allocating any assimilative capacity to Wyoming.
c. Creation of unintended compliance problems for all current and future dischargers,
d. Requiring listing the streams in the area as impaired.

Responses:

a. The revised rules would not eliminate the potential for CBM discharges. According to analyses performed by DEQ staff the revised rules would allow for about 8000 wells discharging to the Powder River (at 5 gpm delivered to the stream per well) without violating standards even after the nondegradation threshold for flow increases (of 15 % of the mean monthly) limitations are applied. For the Tongue River there could be about 2000 discharging wells. Both of these numbers are based on the assumptions that discharge limitations will be based on the monthly 90^{th} percentile flows and that the nondegradation thresholds for other parameters will not be limiting.

b. Water quality standards do not allocate the assimilative capacity of a water body for any parameter. Water quality standards are set at a levels that will protect and maintain existing and future reasonable foreseeable beneficial uses. And the requirement to set standards is the responsibility of each state. The standards proposed by the Board will be protective of agricultural uses though out each of the appropriate water bodies. If it becomes necessary to apportion the assimilative capacity of a water body for EC or SAR (any other parameter) between various point and non-point sources, or between states, the Total Maximum Daily Load (TMDL) process could be used. If an interstate TMDL were necessary the US EPA would be required to facilitate and approve the final product.

c. There will be no unintended consequences of adopting numeric EC and SAR standards for either point and nonpoint sources.

The major point sources include industrial discharges, such as those from CBM development, and discharges from municipalities. The revised rules set numeric standards for EC and SAR at levels that will protect existing uses. Those uses must be protected by the limitations in discharge permits issued by the Department. The revised rules could have consequences for point source discharges. However, regardless of the type of standards in place (narrative vs. numeric) the same in-stream conditions would have to be met and the limitations on discharges included in permits. It is unlikely that narrative or numeric standards for EC and SAR will have any impacts on municipal discharges as the use of water for municipal purposes has very little impact on the EC or SAR of water. Furthermore, there are very few such discharges in the Montana portion of the coal bed development area.

Nonpoint sources, such as return flows from agricultural activities, do not require permits. However, regardless of the type of standards in place (narrative vs. numeric) non-point sources are subject to all water quality standards.

d. The adoption of numeric standards for EC and SAR will not require the listing of streams in the Powder River Basin as impaired. The determination of whether or not a water body is impaired requires an extensive review of water quality information and an assessment of the sources and causes of pollution. If the quality of a water body does not meet one or more standards because of natural conditions it is not impaired and does not need a Total Maximum Daily Load (TMDL). In fact, several water body segments in the Basin were impaired and in need of a TMDL (1996 §303(d) list) based on interpretation of narrative standards for salinity. Additional water body assessments have been done recently and based on the outcome of those assessments TMDLs may be necessary. If the water bodies are impaired by EC, SAR or any other parameter numeric standards will facilitate the determination of appropriate load and waste load allocations.

2. The standards proposed by the irrigators should be adopted because:

Comment A: Salinization of some soils in the Tongue River Valley has occurred with the present water quality. The standards proposed by the irrigators are the only ones that will protect existing water quality

Response: Given the generally very good water quality of the Tongue River, any salinization that has occurred in the Tongue River Valley is the result of current and historic management practices. The potential changes in water quality that could occur as a result of the implementation of the proposed water quality standards for EC and SAR will not require significant changes in irrigation management practices in order to maintain crop yields.

Comment B: The proposals by “Industry” and by DEQ are not as protective of soils and crops as the irrigators proposal.

Response: The “Industry" has not petitioned the Board to initiate rulemaking for EC or SAR or any other parameter, nor has the “Industry” petitioned the Board to amend any other rule. The Coal Bed Methane industry has contended through the it’s comments on the proposed rules, that

numeric water quality standards are not necessary because narrative standards have been implemented successfully by the Wyoming DEQ to control discharges from CBM development.

With respect to the question about, are the standards proposed by the Board protective of existing uses, the Board concludes that the modified standards the Board is proposing for adoption are protective of the beneficial uses of the waters in the Powder River Basin at all times.

3. The proposal by DEQ is not stringent enough during the non-irrigation season.

Response: The revised EC and SAR standards will protect the sensitive crops grown in the Powder River Basin and include seasonal standards. The standards during the non-irrigation season are somewhat less stringent but are believed to be protective of riparian vegetation and floodplain areas that could be flooded during the winter because of ice jams. The Board also believes that the proposed standards are protective of all aquatic life (fish as well as invertebrates). During some parts of the year, summer or winter, the water quality data shows that the proposed standards have been exceed and no information has been found that suggests the aquatic life has been impaired during those excursions.

4. Only the irrigator's proposal will maintain water quality at levels that will allow producers to change irrigation practices and to use sprinklers.

Response: The revised EC and SAR standards water quality will not restrict the use of sprinkler irrigation methods where they may be appropriate. They reflect the EC and SAR's that are necessary to support crop production. They will insure that soil properties will be maintained as long as good irrigation management methods are used.

5. The irrigator's proposal is easier to enforce because it uses instantaneous maxima instead of the 30-day rolling average in DEQ's proposals and the rule should be revised to clarify the averaging period of the standards.

Response: The Board has reconsidered the averaging period for the EC and SAR water quality standards and has concluded that the standards should be expressed as monthly mean values. Monthly mean values are appropriate because the affects of EC and SAR on plants and soils occur slowly and more than a single exposure to instantaneous value greater than the standard is necessary to produce adverse affects.

6. The irrigator's proposal includes a more stringent non-degradation policy than the DEQ proposals.

Response: Please see the response to comment 1-C.

7. If at a latter date the irrigator's proposal which is more stringent that the other proposals, is found to be too strict it is easier to make the standard less stringent than to do the reverse once discharges have begun.

Response: The Board agrees with the concept that improving water quality once it has been degraded is much more difficult and expensive than preventing a problem from developing. The Board does not agree that water quality standards should be set at a level more stringent than necessary to protect uses just because they could be relaxed at some latter date. Board believes that standards proposed for adoption are at levels necessary to protect uses and therefore will not need to be revised. If however, monitoring of the waters receiving discharges suggest more stringent standards are in fact necessary, the Board will not hesitate to initiate rulemaking to make the appropriate changes.

8. The irrigators proposed standards account for the site-specific changes in EC and SAR that are now occurring and will limit cumulative effects.

Response: The Board acknowledges that EC and SAR often increase from the headwaters to the mouth of a watershed. These natural changes however, do not need to be identified in the standards because they are not controllable and are the result of natural hydrologic and geologic processes. The waters in the Powder River Basin are for the most part suitable for irrigated agriculture (although some support marginal or seasonal uses) and the standards proposed for adoption by the Board protect and maintain the beneficial use of irrigated agriculture.

The analysis of cumulative effects of discharges, non-point and point source, are considered when a permit for a point source is written and is reviewed when an existing permit is renewed. Effluent limits for a new point source are set to meet water quality standards based on the best available data and analysis techniques. Effluent limits of an existing point source may be adjusted when a permit is renewed if during the renewal process it becomes cleat that changes are needed to maintain compliance with the in stream standards.

9. The proposed numeric standards should be modified or not be adopted because:

Comment A: They do not include March as an "irrigation season" month. Irrigation during March, especially on the tributaries, is common.

Response: The Board agrees that irrigation does occur during the month of March. . The Board has modified the rules to included the month of March in the "irrigation season."

Comment B: The proposed rules will not protect uses in the basin or downstream in the Yellowstone Valley. The standards should be set so that no increases in EC or SAR are allowed.

Response: The Board believes that the standards proposed for adoption will protect all beneficial uses of the Powder River Basin and the existing permit system will insure that downstream uses will be protected.

The Board also believes that the nondegradation rules in the revised rules are adequate to protect the high quality nature of waters in the basin and thus protect all beneficial uses. An absolute ban of increases of EC and SAR are un-necessarily stringent because high quality waters by definition have some assimilative capacity for increases in a parameter while still fully supporting uses.

Comment C: The current narrative standards coupled with specific discharge limits based on guidelines are more flexible than numeric standards, and fully protect beneficial uses, Wyoming's use of that method for coal bed natural gas discharges has been functioning well per Wyoming DEQ.

Response: Setting permit limits can be a difficult task. The Board believes that setting numeric standards will simplify the permitting process and aid in maintaining a consistent approach to permitting similar activities. The Board believes that these standards are necessary to protect irrigated agriculture in the Powder River Basin. Because the waters may receive discharges of water produced by the CBM industry which may have adverse affects on the uses of these waters.

The recommendation that the Department should develop and implement a strict policy of interpretation of the narrative standards and how they will be applied in setting effluent limits is in effect establishment of a rule without the required public input and Board action. The Department is required to take any such policy to the Board, request rulemaking and follow the established rulemaking guidelines.

Comment D: Numeric standards should not be adopted until the TMDL work is done.

Response: Standard setting by the Board and TMDL development by the Department are separate actions. The Board believes that numeric standards for EC and SAR for the Powder River Basin are necessary to insure the irrigated agricultural use of waters in the Basin is maintained.

A TMDL is based on water quality standards, not the converse. Numeric water quality standards will facilitate the development of TMDL targets and the simplify the process of allocating the assimilative capacity of a water body or in the case of an impaired water body in allocating load reductions among the sources so that standards are met.

NEW RULES II AND III REGARDING CONSTRUCTED PONDS AND RESERVOIRS

1. One commentor stated that New Rules II and III, which establish water quality standards for "ponds and reservoirs constructed for the disposal of coal bed methane water", are illegal, because they conflict with the federal CWA. Specifically, 40 C.F.R. §122.2 excludes from the definition of "waters of the United States" any "waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA." Since the purpose of the constructed ponds and reservoirs is to dispose of coal bed methane wastewater, those ponds are not waters of the United States. Consequently, New Rules II and III conflict with the CWA because they classify the wastewater in constructed ponds as waters of the United States.

Response: The board does not agree that the purpose of the ponds and reservoirs is to dispose of "waste water" from coal bed methane development. The water extracted during coal bed methane development is unaltered from its natural state and, consequently, does not contain any "wastes" that would change the groundwater into "wastewater." Since the waters in the constructed ponds and reservoirs do not constitute "wastewater," those waters are not excluded from the definition of "state waters" under the narrow exclusion for "ponds and lagoons used solely for treating, transporting, and impounding pollutants" provided in § 75-5-103(29)(b)(i), MCA. Consequently, the board is required to classify and adopt water quality standards for these waters pursuant to § 75-5-301(1), MCA.

Whether or not the constructed ponds and reservoirs are "waters of the United States" under 40 C.F.R. § 122.2, is an issue that will be considered by EPA when it determines whether it has jurisdiction to review the newly adopted classification and standards under § 303(c) of the CWA.

2. New Rule III establishes certain designated uses for waters in constructed ponds and reservoirs that include "…watering wildlife and livestock, aquatic life not including fish, secondary contact recreation, and marginally suitable for irrigation." The water quality standards established under New Rule III do not protect these designated uses, because there is no limit on SAR and the standard for EC is 3,000 µS/cm. Given that untreated coal bed methane water has SAR values of 40-50, the department must provide a rationale for why the waters will be "marginally suitable for irrigation" when there is no limit on these high SAR values and the EC limit is 3,000 µS/cm.

Response: The intent of the rule is to provide a level of protection that will maintain these waters marginally suitable for irrigation. In order to implement the original intent of protecting potential sources of irrigation water, the board is amending the rule to specify that the waters are "marginally suitable for irrigation after treatment or with mitigation measures."

3. Except for EC and fecal coliform, New Rule III exempts constructed ponds and reservoirs from all other water quality standards for surface and ground water. The department has failed to provide any rational as to how the designated uses of these ponds will be fully protected when none of the standards in WQB-7 apply to these waters. The designated uses of these ponds include aquatic life, livestock, wildlife, and humans that use these waters for recreation.

Response: The standards in WQB-7 are based on protecting the use of water for consumption by people and for protecting aquatic life including fish. The proposed classification does not include use of this water for consumption by people nor does it include protection for fish. Thus, WQB-7 standards are not appropriate. Protection of livestock, wildlife and aquatic life not including fish will be accomplished through application of the narrative standards in ARM 17.30.637 on a site specific and parameter specific basis.

DEPARTMENTS 521 ANALYSIS

1. Several commentors disagreed with DEQ's memorandum concluding that there are "comparable federal regulations or guidelines" that apply to the adoption of numeric standards for SAR and EC. According to this commentor, the requirements of § 75-5-203, MCA, do not apply, because there are no federal water quality standards, regulations, or guidance for SAR and EC.

Response: The requirements of § 75-5-203, MCA, are triggered whenever there are "comparable federal *regulations* or guidelines *that address the same circumstance*." The circumstance that is being addressed during this rule proposal is the Board's adoption of numeric water quality standards that will protect the designated uses in the Tongue and Powder River basins. While the Board agrees that there are no federal standards or guidance specifically for SAR and EC, there are federal regulations that address the adoption of numeric water quality standards or, in the parlance of the federal Clean Water Act (CWA), "numeric water quality criteria."

Under the CWA, a state's water quality standards consist of two components: (1) the "designated uses" of the water; and (2) "water quality criteria" sufficient to protect those uses. Under EPA's regulations, a state's water quality criteria may be either numeric or narrative. Specifically, EPA defines "criteria" to mean the "*elements of State water quality standards*, *expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports a particular use*. When criteria are met, water quality will generally protect the designated use."

EPA has adopted a regulation that establishes the minimum federal requirements for water quality criteria found in 40 C.F.R. § 131.11. Under that regulation, the "States must adopt those *water quality criteria that protect the designated use*. Such criteria must be based on sound scientific rationale and *must contain sufficient parameters or constituents to protect the designated use*. For waters with multiple use designations, the criteria shall support the most sensitive use." (emphasis added). Although a state may adopt criteria that are more stringent than necessary to protect the designated uses, it is clear that by doing so a state will be adopting criteria that are more stringent than required by EPA's regulation. In contrast, if a state fails to adopt criteria that support a designated use, EPA would disapprove that criteria based upon the requirements in 40 C.F.R. § 131.11. Since 40 C.F.R. § 131.11 establishes minimum requirements for the Board's adoption of numeric water quality criteria for EC and SAR, the requirements of § 75-5-203, MCA, apply.

2. One commentor stated that 40 C.F.R. § 130.3 and § 130.11 are not specific federal "standards" that apply to the Board's adoption of standards for EC and SAR. Therefore, the department's reliance on these regulations to conclude that § 75-5-203, MCA, applies is wrong.

Response: The Board is not relying on 40 C.F.R. § 130.11, which establishes requirements for water quality planning and management, as a basis for concluding that § 75-5-203, MCA, applies. Rather, the Board is relying on 40 C.F.R. § 131.11 and § 130.3 as "comparable federal

regulations" that trigger the requirements of 75-5-203, MCA. *See* Response to Comments No. 1 and No. 3.

3. To the extent 40 C.F.R. § 130.3 is considered a "comparable federal regulation," the plain language of the regulation allows the board to adopt water quality standards that "enhance" water quality. In addition, the regulation provides that "[S]uch standards serve the dual purposes of establishing the water quality goals for a specific water body and serving as the regulatory basis for establishment of water quality-based treatment controls and strategies beyond the technology-based level of treatment required by section 301(b) and 306 of the Act." According to this commentor, this language allows water quality standards to take into account future development, the need for future MPDES permits, downstream irrigators, and natural increases in pollutants. As such, the Petitioners' standards are consistent with, not more stringent than, federal regulations.

Response: The regulation provides, in relevant part, that: "A water quality standard (WQS) defines the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria necessary to protect those uses. States and EPA adopt WQS to protect public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act (CWA)."

Although the regulation does not explain how a water quality standard might "enhance" water quality, the regulation does explain how a water quality standard "serves the purposes of the Act."

"*Serves the purposes of the Act* (as defined in 101(a)(2) and 303(c) of the Act) means that WQS should, whenever attainable, provide water quality for the protection of fish, shellfish and wildlife, and for recreation in and on the water and take into consideration their use and value for public water supplies, propagation of fish, shellfish, and wildlife, recreation in and on the water, and agricultural, industrial, and other purposes including navigation." 40 C.F.R. § 130.3

Since a water quality standard "serves the purposes of the Act" by protecting designated uses, the term "enhance" in this context most likely means that water quality is enhanced if the designated uses are fully protected.

In addition, the board does not agree that the quoted language from the regulation means that water quality standards are established to account for future growth, natural or man-induced increases of pollutants, or future permits. Rather, the quoted language simply reiterates the requirements of § 301(b)(1)(C) of the CWA. Under § 301(b)(1)(C), all permits must contain permit limits that ensure compliance with applicable water quality standards, even if those limits are more stringent than EPA's technology-based effluent limits promulgated under § 301(b) and § 306 of the CWA.

Given that the entire text of the regulation emphasizes that the purpose of water quality standards is to protect designated uses, the board does not believe that the single term "enhance" or the reference to water-quality based permit limits required by § 301(b)(1)(C) broadens that purpose. While other CWA requirements, such as a state's antidegradation policy, allows a state to plan

for future development by protecting "high quality" waters from further degradation, the regulation applicable to this matter clearly states that water quality criteria need only protect designated uses.

4. Several commentors explained that protecting the assimilative capacity of the stream is not the only purpose of the standards in the Irrigator's Petition. This commentor contend that the petitioners' standards, which set increasingly more stringent standards in the upstream reaches, are necessary to protect the designated uses from natural increases in SAR and EC that accumulate in the downstream reaches of the Tongue River.

Response: The Board does not agree that increasingly more stringent standards in the upstream reaches of the Tongue River are necessary, or, for that matter, sufficient to prevent natural increases in EC. Assuming that the higher concentrations in the downstream reaches are the result of natural conditions, it is not clear how establishing more stringent standards at the Wyoming border will prevent this natural occurrence. Regardless of the numeric standard adopted by the board, no numeric standard will prevent natural increases of EC in the Tongue River. For this reason, the board does not agree that the petitioners' more stringent standards in the upstream reaches are necessary to protect designated uses, because those standards cannot prevent natural increases.

To the extent natural increases are problematic, the department's TMDL program is specifically designed to address that problem. Simply stated, a TMDL is the total load that a stream can assimilate from all pollution sources without violating water quality standards. § 75-5-103(29), MCA. In establishing a TMDL, the department must "allocate" the amount of a pollutant that may be discharged by point sources, nonpoint sources, and natural sources, "at a level necessary to achieve compliance with applicable water quality standards" Id. Consequently, if the department determines that permit limits are inadequate to prevent violations of water quality standards due to natural increases, then a TMDL may be developed to preclude this occurrence by taking into account loading from natural sources.

5. One commentor stated that the right to a "clean and healthful" environment in Montana's Constitution supports the adoption of more stringent standards in the upstream reaches. To the extent that the department interprets § 75-5-203, MCA, as prohibiting such standards, the department's interpretation would render the statute unconstitutional since these standards are necessary to protect beneficial uses.

Response: Neither the department nor the board interprets § 75-5-203, MCA, as prohibiting standards that are *necessary* to protect beneficial uses. Rather, the department has concluded that the petitioners' standards are *more stringent than necessary to protect designated uses.* As a result, the standards are more stringent than comparable federal regulations and cannot be adopted *unless* certain written findings are made, as required by § 75-5-203, MCA and § 75-5-309, MCA. As to the constitutional implications arising from the plain language of the statute, the Board has no authority to determine the constitutional validity of statutes. Brisendine v. Dept. of Commerce, 253 Mont. 361, 362 (1992).

6. Several commentor disagreed with the department's statement in its memorandum to the board concluding that "there is no record evidence, nor can there be, demonstrating that more-stringent standards are necessary to protect public health or designated uses of the water." This commentor stated that there is ample peer-reviewed scientific literature to support the petitioners' standards. The commentor further stated that the department cannot simply assume that no evidence would ever be included in the record as a basis for the proposed standards.

Response: The department's conclusion that "there is no record evidence, nor can there be" is based upon the Petitioners' rationale for establishing the standards and upon the standards themselves. Although the Petition references numerous studies, the Petition itself does not explain how those studies support a finding that progressively more-stringent standards are necessary to protect designated uses in the upstream reaches. Instead, the Petition states that the standards were developed not only to protect designated uses, but also to "equitably allocate" the assimilative capacity of the streams in Montana and prevent Wyoming from using up the assimilative capacity before the streams enter Montana.

As explained in MAR Notice No. 17-172, the "assimilative capacity" of a stream is the difference between the existing concentration of a parameter in the stream and the maximum concentration that could be allowed without violating water quality standards. In other words, a stream has "assimilative capacity" for a parameter when existing water quality is better than necessary to protect designated uses from harmful effects. In distinction, a stream has no "assimilative capacity" when the existing "high quality" is lowered to the point where harmful effects occur and water quality standards are violated. Accordingly, a water quality standard that protects the assimilative capacity of a stream is, by definition, protecting "high quality" water that is better than needed to protect designated uses.

Since Petitioners standards are meant to protect the "assimilative capacity" of a stream, those standards will, by definition, protect existing water quality that is better than needed to protect designated uses. Therefore, the department's statement that "there is no record evidence, nor can there be," accurately reflects the fact that no evidence will support a finding that Petitioners' standards are "necessary" to protect designated uses.

7. One commentor argued that the comparable federal guideline for SAR and EC is the language in the federal CWA stating that the purpose of the Act is to "restore and maintain" the nation's waters. 33 U.S.C. § 1251(a). This language makes it clear that the relevant guidelines require that degraded waters be restored, or at a minimum, **maintained,** where there are no numeric water quality standards. Since the applicable federal regulation requires restoration and maintenance of water quality, the Petitioners' standards for EC and SAR are not more stringent than this guideline. EPA's regulation at 40 C.F.R. § 130.2, which states that "water quality standards are to protect the public health and **enhance** the quality of water and serve the purposes of the Act," indicates that water quality standards are intended to improve water quality.

Response: The Board disagrees that the broad policies and goals of the CWA, including the goal to "maintain and restore" the nation's waters, are applicable federal guidelines for the adoption of numeric water quality criteria. Rather, the CWA goal of "restoring and maintaining" the nation's waters has been used by EPA as a basis for requiring states to adopt an antidegradation policy that maintains "high quality" waters. *See* "Water Quality Standards Handbook: Second Edition" at page 4-1 and 4-7. While the CWA's goal of maintaining water quality may be a relevant federal guideline for protecting "high quality" waters that are better than needed to protect beneficial uses, that goal is not relevant to the Board's proposal for establishing numeric water quality criteria for the protection of beneficial uses. Similarly, the term "enhance," as used in EPA's regulations, is not a relevant or useful "guideline" for numeric water quality criteria whose sole purpose is the protection of designated uses.

8. One commentor stated that the department's definition of "assimilative capacity" is flawed, because it relies on a statutory scheme for establishing water quality standards that has been superceded by the enactment of the 1972 CWA. This commentor relies on the court's discussion in Natural Resources Defense Council (NRDC) v. EPA, 915 F.2d 1314, 1316 (9th Cir. 1990), to argue that Congress changed the requirements for water quality standards after recognizing the "flaws" in the states' historic method of adopting those standards. The NRDC court explained that the old system was flawed, because water quality standards specified the "tolerable degree of pollution" that a stream could assimilate and there was no incentive to pollute less. Id. According to this commentor, the new CWA now requires that water quality standards "enhance" the nation's waters, not allow pollution up to the "tolerable" limit. This commentor also cites Environmental Defense Fund v. Corps of Engineers, 348 F. Supp. 916, 936 (N.D. Miss. E.D. 1972) in support of defining "assimilative capacity" as the stream's "ability to carry off pollutants."

Response: The Board disagrees that the Department's definition of "assimilative capacity" is flawed due to its reliance on water quality standards that specify the tolerable degree of pollutants that a stream can assimilate. Contrary to this commentor's contention, the 1972 CWA did not change the manner in which states adopt water quality standards. As explained in NRDC, the major change enacted by the 1972 CWA was to "**shift the focus** of the water pollution laws **away from the enforcement of water quality standards and toward enforcement of technological standards**" promulgated by EPA. NRDC, 915 F.2d at 1316-1317. This "shift in focus," however, did not eliminate or change the states' water quality standards.

Rather than change the old regime, Congress carried forward the states' former method of developing water quality standards under the express provisions of § 303(c) of the CWA. Under § 303(c), states are required to specify designated uses for a water segment, and any designated use adopted by states prior to 1972 were "deemed" to be the state's initial designation under the new CWA. Id. More importantly, under § 303(c), Congress carried forward the historic method of establishing water quality criteria at a point where "the maximum concentrations of pollutants…could occur without jeopardizing the use." Id.

From the discussion in NRDC, it is clear that the new CWA did nothing to change the historic manner in which states adopt water quality standards at the "tolerable effect" level for purposes of protecting designated uses. For this reason, NRDC does not contradict the department's definition of "assimilative capacity," which describes water quality standards as being established at the "tolerable effect" level.

Finally, the definition of "assimilative capacity" used by the court in Environmental Defense Fund (EDF) v. Corps of Engineers is not inconsistent with the department's definition. As explained in response to Comment No. 6, the department's definition of "assimilative capacity" refers to water quality that is better than necessary to protect designated uses. To say that "assimilative capacity" means that the stream has the "ability to carry off pollutants" is no different than saying that the stream has better quality than needed to protect beneficial uses and, therefore, can assimilate more pollutants.

9. One commentor stated that water quality standards should not be established at the point where there is no remaining assimilative capacity for a particular pollutant. Instead, water quality standards should include a "margin of safety" between the standard and the point where adverse impacts may occur. In support of this comment, the commentor cites an EPA regulation that requires a "margin of safety" to account for any uncertainty in establishing TMDLs. The regulation also provides that: "A **margin of safety may be expressed as unallocated assimilative capacity** or conservative analytical assumptions used in establishing the TMDL." 40 C.F.R. § 130.32(8) (emphasis added).

Response: The Board disagrees that water quality standards should include a "margin of safety" that protects the assimilative capacity for two reasons. First, adopting a "margin of safety" that protects assimilative capacity would result in criteria that are more stringent than EPA's regulations applicable to water quality criteria. 40 C.F.R. § 131.11. As explained above, the board may not adopt more stringent standards unless there is evidence to support their adoption pursuant to § 75-5-203 and § 75-5-309, MCA. Since there is no evidence, the board is precluded from adopting standards that protect assimilative capacity. However, the department has developed numeric criteria in its Alternative No. 1, based upon conservative (i.e., protective) assumptions for the protection of existing and designated uses.

Second, the board does not believe that water quality standards should be developed in a manner that attempts to duplicate the function of other water quality programs. The function of protecting or allocating the assimilative capacity of streams is the function of the nondegradation policy and, in some instances, the TMDL process. Since these programs adequately protect or allocate assimilative capacity, the board does not believe that the water quality standards are necessary or, for that matter, appropriate to accomplish the same result. For this reason, the board agrees with EPA's comment stating that establishing water quality criteria to allocate or protect the assimilative capacity of streams is poor precedent.

10. One commentor stated that Montana's Constitution requires that pollution be prevented and also requires that existing beneficial uses of water be recognized and confirmed. Specifically,

the right to a "clean and healthful" environment provided in Article II, Section 3 and Article IX, Section 1, and the constitutional provision recognizing and confirming existing water rights in Article IX, Section 3 of Montana's Constitution, require the Board to adopt numeric standards that protect the existing water rights of the Tongue River Water Users' Association (TRWUA). In addition, another commentor argued that the contract between the State of Montana and TRWUA for the use of water in the Tongue River Reservoir indicates that the water rights being served under that contract must be protected.

Response: The numeric standards under consideration by the board were specifically developed to protect existing irrigation practices. As such, the standards will protect the existing water rights of the TRWUA.

11. One commentor stated that the proposed standards for EC and SAR would not apply to other rivers and streams in Montana, as suggested by the department, but only apply to the streams and rivers identified in the rule.

Response: As noted by the commentor, the board is adopting numeric standards for EC and SAR only for those streams and rivers identified in the rule proposals. The use of the standards by the department, however, may result in the application of these standards in other streams and rivers in Montana. Specifically, since the majority of streams in Montana have narrative criteria for SAR and EC, the department will use existing information including the information and process that was used to develop the numeric standards for the Powder River Basin as a basis for translating the narrative criteria during its permitting actions. As a result, the application of these numeric standards for EC and SAR to other streams and rivers with similar characteristics in Montana may occur.

12. One commentor stated that the department's analysis of § 75-5-203, MCA, failed to consider whether the standards were necessary to protect the environment. This commentor stated that the Board has broad discretion to adopt rules it deems necessary to protect the environment.

Response: The department's analysis did not discuss the very general term "environment," for the simple reason that the board has no authority under § 75-5-301, MCA, to adopt rules that protect all aspects of the "environment." Rather, § 75-5-301, MCA, authorizes the board to adopt rules that establish the designated uses of a water body and to adopt standards that protect those uses. Since water quality standards protect a very limited aspect of the human "environment," the department did not interpret § 75-5-203, MCA and § 75-5-309, MCA, as requiring any analysis of whether the reach-specific standards are necessary to protect every aspect of the environment.

13. One commentor attached a memorandum discussing the board's adoption of certain air quality rules, which concluded that there were no comparable federal regulations so that HB 521 did not apply. This commentor stated that the department's prior position is correct and should be applied here. Since there are no comparable federal regulations or guidelines for SAR and EC, the department should conclude, as it did before, that HB 521 does not apply.

Response: The department's position that HB 521 does not apply if there are no comparable regulations has not changed. There are many instances where the department has determined that there are no comparable federal regulations and, for that reason, HB 521 did not apply. The memorandum referred to by this commentor addressed one of these instances where there clearly were no "comparable federal regulations or guidelines." In that particular instance, the proposed rule amendments defined the term "negligible risk," which is a term used in state statute. *See* § 75-2-215(3)(d), MCA. Since EPA has no similar regulation or guideline requiring certain incinerators demonstrate that they constitute no more than a "negligible risk" to public health and the environment, there were no comparable federal regulations and HB 521 did not apply.

In this instance, EPA has promulgated a federal regulation that specifies the minimum federal requirements for EPA's review and approval of a state's numeric water quality criteria. Under the authority of 40 C.F.R. § 131.11, EPA would disapprove a numeric criteria adopted by a state, if the criteria were inadequate to protect the designated uses of a water body. Since 40 C.F.R. § 131.11 establishes minimum federal requirements for the state's adoption of numeric criteria, the regulation is a "comparable" federal regulation for purposes of adopting numeric criteria for EC and SAR. Therefore, HB 521 applies.

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